

In the Claims

Listing of All Claims Including Current Amendments

1. (Currently Amended) A method for service braking a vehicle by means of a service brake actuator having a rotative motor, ~~preferably an electric motor~~, as its service brake applying means, ~~characterized in that~~ wherein energy from a loaded spring in a spring brake actuator connected to the service brake actuator is released at will for supplying supplementary service brake energy to the service brake actuator.

2. (Currently Amended) A device for carrying out the method of claim 1 for service braking a vehicle by means of a service brake actuator having a rotative motor, ~~preferably an electric motor~~, as its service brake applying means, ~~characterized by~~ wherein the device comprises:

a the spring brake actuator connected to the service brake actuator and containing a powerful spring and

control means for controlled release of energy from the spring when loaded, supplementary to the service brake energy supply from the service brake actuator.

3. (Currently Amended) A device according to claim 2, ~~characterized in that~~ wherein the spring in the spring brake actuator is a clock spring or spiral spring.

4. (Currently Amended) A device according to claim 3, ~~characterized in that~~ wherein the spring brake actuator comprises:

the clock spring, attached at its outer end to a spring brake actuator housing and mechanically charged at a rotation of ~~the~~ an actuator shaft in a brake release direction[[],];

an electric coil for keeping - when electrically energized - the clock spring in its charged condition[[],]; and

transfer means for transferring the rotative energy of the clock spring to the actuator shaft in a brake applying direction, when the coil is deenergized, but allowing free rotation of the shaft in either direction, when the coil is energized.

5. (New) A method for service braking a vehicle comprising:

providing a service brake actuator having a rotative motor as its service brake applying means, and a spring brake actuator connected to the service brake actuator and having a chargeable spring disposed in the spring brake actuator;

charging the spring in one rotational direction during a normal brake or release operation; and

releasing the charged spring in another rotational direction for supplying supplementary service brake energy to the service brake actuator to apply a brake operation requiring an energy in excess of the normal brake operation or in an emergency situation.

6. (New) A method according to claim 1, wherein the charging of the spring occurs at a release of the service brake.

7. (New) A brake device for a vehicle comprising:

a service brake actuator including a motor and a drive shaft connected to the motor and rotatable to apply a service brake operation;

a spring brake actuator connected to the service brake actuator and containing a spring, the spring having a charged position storing energy therein and a released position for releasing the stored energy; and

control means for controlled release of the stored energy from the spring in its charged position and applying a supplemental rotational energy to the drive shaft of the service brake actuator.

8. (New) A brake device according to claim 7, wherein the spring in the spring brake actuator is a clock spring or spiral spring.
9. (New) A brake device according to claim 8, wherein the clock spring of the spring brake actuator has an outer end attached to a spring brake actuator housing and mechanically charged at a rotation of an actuator shaft in a brake release direction.
10. (New) A brake device according to claim 9, further comprising an electric coil for keeping - when electrically energized - the clock spring in its charged position, and transfer means for transferring the rotational energy of the clock spring to the actuator shaft in a brake applying direction, when the coil is de-energized, but allowing free rotation of the shaft in either direction, when the coil is energized.
11. (New) A brake device according to claim 10, wherein the transfer means comprises a cylindrical hub disposed between the actuator shaft and the clock spring.
12. (New) A brake device according to claim 11, wherein the transfer means further comprises a locking spring coupled with the actuator shaft and the cylindrical hub.